

WHAT IS CLAIMED IS:

1. A data recording device for recording data on an optical disc by irradiating a laser pulse on the optical disc while controlling rotation of the optical disc at a constant angular velocity, the device comprising:

a laser condition varying unit that changes a peak value of the laser pulse in accordance with a value relating to a linear velocity of the optical disc at a position at which the laser pulse is irradiated.

2. The data recording device according to claim 1, further comprising:

a feedback unit for receiving reflection light of the laser pulse irradiated on the optical disc and feedback controlling the peak value of the laser pulse;

wherein the laser condition varying unit prohibits the feedback controlling of the feedback unit for a predetermined period after the peak value of the laser pulse has been altered.

3. The data recording device according to claim 1, wherein the laser condition varying unit changes a method for altering the peak value of the laser pulse in accordance with the type of optical disc.

4. The data recording device according to claim 3, wherein the laser condition varying unit receives a write strategy specifying value that contains information for altering the peak value of the laser pulse from an external device.

5. The data recording device according to claim 4,

wherein absolute time information that contains recorded data position information is recorded on the optical disc, and wherein the laser condition varying unit detects the value relating to the linear velocity based on the absolute time information, calculates a predetermined time using the absolute time information, and alters the peak value of the laser pulse using the write strategy specifying value every calculated predetermined time.

6. A data recording device for recording data on an optical disc by irradiating a laser pulse on the optical disc while controlling rotation of the optical disc at a constant angular velocity, the device comprising:

a laser condition varying unit for generating a clock using a value relating to a linear velocity of the optical disc at a position at which the laser pulse is irradiated and for altering at least one of a pulse timing and a pulse width of the laser pulse based on the clock.

7. The data recording device according to claim 6, wherein the laser condition varying unit changes a method for altering at least one of a pulse timing and a pulse width of the laser pulse in accordance with the type of optical disc.

8. The data recording device according to claim 7, wherein the laser condition varying unit receives a write strategy specifying value that contains information used for altering at least one of the pulse timing and the pulse width of the laser pulse from an external device.

9. The data recording device according to claim 8, wherein absolute time information that contains recorded

data position information is recorded on the optical disc,  
and wherein the laser condition varying unit detects a value  
relating to linear velocity based on the absolute time  
information, calculates a predetermined time using the  
5 absolute time information, and alters a peak value of the  
laser pulse using the write strategy specifying value every  
calculated predetermined time.

10 10. A data recording device for recording data on an  
optical disc by irradiating a laser pulse on the optical  
disc while controlling rotation of the optical disc at a  
constant angular velocity, the device comprising:

15 a laser condition varying unit for altering a peak  
value of the laser pulse in accordance with a value relating  
to a linear velocity of the optical disc at a position at  
which the laser pulse is irradiated;

20 wherein the laser condition varying unit generates a  
clock using the value relating to the linear velocity of the  
optical disc at a position at which the laser pulse is  
irradiated and alters at least one of a pulse timing and a  
pulse width of the laser pulse based on the clock.

25 11. A data recording device for recording data on an  
optical disc by irradiating a laser pulse on the optical  
disc while controlling rotation of the optical disc at a  
constant angular velocity, the device comprising:

30 a storage device for storing a specifying value  
specifying at least one of a pulse timing and a pulse width  
of the laser pulse, wherein the specifying value is set in  
accordance with a linear velocity of the optical disc at a  
position at which the laser pulse is irradiated; and

a control unit for reading the specifying value stored  
in the storage device and sequence controlling at least one

of the pulse timing and the pulse width of the laser pulse based on the read specifying value.

12. A data recording control device for controlling  
5 recording of data on an optical disc while controlling  
rotation of the optical disc at a constant angular velocity,  
wherein the date is recorded by irradiating a laser pulse on  
the optical disc, and wherein a spiral pregroove for  
recording disc information is formed on the optical disc,  
10 the device comprising:

a detection circuit for reproducing the disc  
information of the pregroove and detecting a value relating  
to a linear velocity of the optical disc at a position at  
which the laser pulse is irradiated in accordance with the  
15 reproduced disc information;

a strategy specifying circuit connected to the  
detection circuit for specifying a peak value of the laser  
pulse in accordance with the detected value; and

a laser drive circuit connected to the strategy  
20 specifying circuit for altering the peak value of the laser  
pulse to the specified peak value.

13. The data recording control device according to  
claim 12, wherein the laser drive circuit includes:

25 a target value setting circuit for setting a target  
peak value used to alter the peak value of the laser pulse;

a sample signal acquisition circuit for receiving a  
sample signal of a reflection light of the laser pulse from  
the optical disc;

30 a control circuit for controlling the peak value of the  
laser pulse by comparing the target peak value with a value  
relating to the sample signal of the sample signal  
acquisition circuit; and

wherein the sample signal acquisition circuit holds a value of the sample signal received before the peak value of the laser pulse is altered for a predetermined time after the peak value of the laser pulse is altered.

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14. The data recording control device according to claim 12, wherein the strategy specifying circuit changes a method for altering the peak value of the laser pulse in accordance with the type of optical disc.

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15. The data recording control device according to claim 14, further comprising:

a memory connected to the strategy specifying circuit for retrieving and holding information from an external device that relates to a method for altering the peak value of the laser pulse that is specified for each type of optical disc;

wherein the strategy specifying circuit alters the peak value of the laser pulse in accordance with the detection of the detection circuit and the information held in the memory.

16. The data recording control device according to claim 15, wherein the disc information of the pregroove includes absolute time information that contains recorded data position information, and the absolute time information is a value relating to a linear velocity of the optical disc at a position at which the laser pulse is irradiated, and wherein the detection circuit detects the absolute time information, and the strategy specifying circuit calculates a predetermined time using the absolute time information and alters a peak value of the laser pulse every calculated predetermined time.

17. A data recording control device for controlling recording of data on an optical disc while controlling rotation of the optical disc at a constant angular velocity, wherein the data is recorded by irradiating a laser pulse on the optical disc, and wherein a spiral pregroove for recording disc information is formed on the optical disc, the device comprising:

10 a detection circuit for reproducing the disc information of the pregroove and detecting a value relating to a linear velocity of the optical disc at a position at which the laser pulse is irradiated in accordance with the reproduced disc information;

15 a clock generating circuit connected to the detection circuit for generating a clock using a value relating to the linear velocity of the optical disc at the position at which the laser pulse is irradiated in accordance with the detected value;

20 a strategy specifying circuit connected to the detection circuit for specifying at least one of a pulse width and a pulse timing of the laser pulse in accordance with the detected value; and

25 a laser drive circuit connected to the strategy specifying circuit for altering the at least one of the pulse width and the pulse timing of the laser pulse to the specified at least one of the pulse timing and the pulse width of the laser pulse based on the clock.

18. The data recording control device according to claim 17, wherein the strategy specifying circuit changes a method for altering a peak value of the laser pulse in accordance with the type of optical disc.

19. The data recording control device according to

claim 18, further comprising:

5 a memory connected to the strategy specifying circuit for retrieving and holding information from an external device that relates to a method for altering at least one of the pulse width and the pulse timing that is specified for each type of optical disc;

10 wherein the strategy specifying circuit alters the at least one of the pulse width and the pulse timing of the laser pulse in accordance with the detection of the detection circuit and the information held in the memory.

15 20. The data recording control device according to claim 19, wherein the disc information of the pregroove includes absolute time information that contains recorded data position information, wherein the absolute time information is a value relating to a linear velocity of the optical disc at a position at which the laser pulse is irradiated, the detection circuit detects the absolute time information, and the strategy specifying circuit calculates  
20 a predetermined time using the absolute time information and alters at least one of the pulse width and the pulse timing of the laser pulse every calculated predetermined time.

25 21. A data recording control device for controlling recording of data on an optical disc while controlling rotation of the optical disc at a constant angular velocity, wherein the data is recorded by irradiating a laser pulse on the optical disc, and wherein a spiral pregroove for recording disc information is formed on the optical disc,  
30 the device comprising:

a detection circuit for reproducing the disc information of the pregroove and detecting a value relating to a linear velocity of the optical disc at a position at

which the laser pulse is irradiated in accordance with the reproduced disc information;

5 a clock generating circuit connected to the detection circuit for generating a clock using a value relating to the linear velocity of the optical disc at the position at which the laser pulse is irradiated in accordance with the detected value;

10 a strategy specifying circuit connected to the detection circuit for specifying a peak value of the laser pulse and at least one of a pulse width and a pulse timing of the laser pulse in accordance with the detected value; and

15 a laser drive circuit connected to the strategy specifying circuit for altering the peak value of the laser pulse based on the specified peak value, wherein the laser drive circuit alters the at least one of the pulse width and the pulse timing of the laser pulse to the specified at least one of the pulse timing and the pulse width of the laser pulse based on the clock.